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1) Appeal Brief

Number of Pages Including this Page: 15

Application No.	:	10/764,191
Applicant(s)	:	James Charles Dunbar
Filed	:	01/23/2004
Title	:	Hair Colouring Compositions and their Use
TC/A.U.	:	1751
Examiner	:	Eisa B. Elhilo
Conf. No.	:	8065
Docket No.	:	CM2596MC
Customer No.	:	27752

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 10/764,191  
Applicant(s) : James Charles Dunbar  
Filed : 01/23/2004  
Title : Hair Colouring Compositions and their Use  
TC/A.U. : 1751  
Examiner : Eisa B. Elhilo  
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APPEAL BRIEF

Mail Stop Appeal Brief - Patents

Commissioner for Patents

P. O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

This Appeal Brief is submitted in support of the Notice of Appeal filed via facsimile on June 16, 2005. Timely filing is provided up to and including August 16, 2005.

REAL PARTY IN INTEREST

The real party in interest is The Procter & Gamble Company of Cincinnati, Ohio.

RELATED APPEALS AND INTERFERENCES

An appeal to the Board of Patent Appeals and Interferences is pending for US Application Serial No. 10/679,776, attorney docket number CM2530C. There are no other known related appeals, interferences, or judicial proceedings.

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### STATUS OF CLAIMS

Claims 1-17 are pending in the present application. Claims 1-17 are rejected.

Claims 1-17 are appealed.

A complete copy of the appealed claims is set forth in the Claims Appendix attached hereto.

### STATUS OF AMENDMENTS

No claim amendment was filed.

### SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1 is directed to a hair colouring composition comprising (i) at least one developer selected from amino aromatic systems capable of being oxidised and thereafter undergoing only a single electrophilic attack reaction, and (ii) at least one developer selected from amino aromatic systems capable of being oxidised and thereafter undergoing at least two electrophilic attack reactions, and (iii) at least one coupler. See the specification of the present application at page 2, lines 7-12.

Claim 14 is directed to a method of improving the root-to-tip evenness given by a hair colouring composition comprising at least one developer capable of being oxidised and thereafter undergoing only one electrophilic attack reaction and at least one coupler, the method comprising the step of combining in the hair colouring composition a developer selected from amino aromatic systems capable of being oxidised and thereafter undergoing at least two electrophilic attack reactions. See the specification of the present application at page 2, lines 13-20.

Claim 15 is directed to a method of colouring hair comprising applying to the hair (i) one or more developers selected from amino aromatic systems capable of being oxidised and thereafter undergoing only a single electrophilic attack reaction and (ii) one or more developers capable of being oxidised and thereafter undergoing at least two electrophilic attack reactions and (iii) one or more couplers. See the specification of the present application at page 2, lines 7-12, and 26.

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Claim 17 is directed to a hair colouring kit comprising (a) an individually packaged colouring component comprising (i) one or more developers selected from amino aromatic systems capable of being oxidised and thereafter undergoing only a single electrophilic attack reaction and (ii) one or more developers selected from amino aromatic systems capable of being oxidised and thereafter undergoing at least two electrophilic attack reactions and (iii) one or more couplers, and (b) an individually packaged oxidising component. See the specification of the present application at page 2, lines 7-12 and 24-30.

#### GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The following ground of rejection is submitted for consideration on appeal by the Board:

- I. Rejection under 35 USC § 103(a) over International Application WO 98/52519 to Pratt in view of US Patent No. 5,578,087 to Audousset et al.

#### ARGUMENTS

In the Office Action of March 9, 2005, the Examiner finally rejected Claim 1-17 as being unpatentable under 35 U.S.C. § 103(a) over International Application WO 98/52519 to Pratt ("Pratt") in view of US Patent No. 5,578,087 to Audousset et al. ("Audousset").

For the reasons set forth below, Appellants submit that Claims 1-17 are patentably distinct from and nonobvious over the cited references. Thus, the Board should reverse the Examiner's rejection. Accordingly, favorable action by the Board is respectfully requested.

- I. Rejection Under 35 USC § 103(a) Over International Application WO 98/52519 to Pratt in view of US Patent No. 5,578,087 to Audousset et al.

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Claims 1-17 are finally rejected under 35 USC 103(a) as being unpatentable over International Application WO 98/52519 to Pratt ("Pratt") in view of US Patent No. 5,578,087 to Audousset et al. ("Audousset"). The Examiner asserts that Pratt teaches a hair coloring composition comprising a developer of N,N-disubstituted p-phenylenediamine that is capable of undergoing only a single electrophilic attack reaction and couplers of N,N-dimethyl acetamide and diethyl acetoacetamide that read on Appellants' claimed formula (I). The Examiner further asserts that Audousset teaches that the developers of para-phenylenediamine and N,N-bis ( $\beta$ -hydroxyethyl) para-phenylenediamine both can be used in hair coloring compositions. Thus, the Examiner concludes that there is a sufficient motivation to one having ordinary skill in the art to incorporate the p-phenylenediamine that undergoes at least two electrophilic reactions as taught by Audousset in the composition of Pratt with reasonable expectation of achieving a workable coloring composition.

The Examiner also asserts that Appellants' comparative data in Examples 1 and 2 at page 11 of the specification, which was presented to demonstrate the unexpected and unobvious results of the claimed invention over the composition of the prior art, is not commensurate in the scope with the compositions of Pratt. The Examiner asserts that Pratt teaches a composition comprising 4-(N-ethyl, N-hydroxyethyl-p-phenylenediamine) in combination with N,N-diethylacetoacetamide and does not exemplify dicloropara-aminophenol that is used in Appellants' comparative data in examples 1 and 2.

The Examiner further asserts that Appellants' arguments against Pratt and Audousset are improper because one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. Therefore, The Examiner concludes that a *prima facie* case of obviousness has been established.

- A. A *prima facie* case of obviousness has not been established because there is no suggestion or motivation to modify and combine the cited references.

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The combination of Pratt and Audousset does not establish a *prima facie* case of obviousness because there is no suggestion or motivation to modify the cited references to achieve Appellants' hair coloring composition. Although nonobviousness cannot be shown by attacking references individually where the rejections are based on combinations of references, it is proper to show nonobviousness where one prior art reference teaches away from the combination with a second prior art reference. *See In re Rudko*, Civ. App. No. 98-1505 (Fed. Cir. May 14, 1999) (unpublished). A reference will teach away when it suggests that the developments flowing from its disclosures are unlikely to produce the objective of the applicant's invention. *See In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). Further, if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *See In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984); *See also* MPEP § 2143.01. Modifying the composition of Pratt by additionally incorporating the developer para-phenylenediamine as taught in Audousset would change the principle of operation of the invention of Pratt. Therefore, Pratt teaches away from the combination with Audousset.

Appellants' Claim 1 recites a hair color composition comprising (i) at least one developer selected from amino aromatic systems capable of being oxidized and thereafter undergoing *only a single electrophilic attack reaction*, (ii) at least one developer selected from amino aromatic systems capable of being oxidized and thereafter undergoing *at least two electrophilic attack reactions*, and (iii) at least one coupler. Claims 14, 15 and 17 also recite amino aromatic systems capable of being oxidized and thereafter undergoing at least two electrophilic attack reactions. Also, Claims 2-13 depend from Claim 1, and Claim 16 depends from Claim 15. Therefore, Appellants address Claims 1-17 together. Appellants' claimed hair color compositions provide improved root-to-tip evenness of color applied to the hair versus compositions containing only single electrophilic attack developers and also can provide improved root-to-tip evenness versus compositions containing only multiple electrophilic attack developers of certain types.

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First, Pratt is directed to hair coloring compositions comprising (a) developers selected from amino aromatic systems capable of being oxidized and thereafter undergoing *a single nucleophilic attack reaction*, and (b) certain described couplers. Pratt specifically teaches that "the structure of the developer is such that it reacts substantially only at one position, which is normally an amine. Suitable developers of this type include amino aromatic systems in which there is only one primary amine group, at which reaction occurs, other amine and other reactive groups being protected by blocking substituents." See page 5, lines 30-36 of Pratt. Pratt describes the advantage of selecting only a developer which reacts substantially just at one position as being that the disclosed couplers couple with the developer at only one position so as to produce only one colored dimer, which results in extremely efficient formation of color molecules and improved accuracy in predicting the final overall color produced. These color molecules are described as having improved wash-fastness. Thus, the principle of operation of the composition of Pratt is based on the requirement of selecting a developer which is capable of undergoing only a single nucleophilic attack reaction. As a result, Pratt teaches away from using a developer which is capable of undergoing more than one nucleophilic attack reaction, such as unsubstituted para-phenylenediamine.

Second, Audousset is directed to dyeing compositions containing para or ortho type oxidation dye precursors (*i.e.*, developers) and couplers consisting of at least one benzimidazole derivative and at least one meta-phenylenediamine. The compositions of Audousset are described as providing ashen or blue hues in hair which display tenacity with respect to exposure to UV irradiation and to repeated washes. These benefits are provided by using the described coupler derived from benzimidazole and meta-phenylenediamines. Audousset teaches that a variety of para or ortho type dye precursors (*i.e.*, developers) may be used in combination with the benzimidazole derivative coupler to achieve the described benefits. However, Audousset fails to disclose any benefit in selecting one of the suitable developers over another from among the extensive list disclosed, much less any benefit from specifically selecting the combination of a single attack developer and a multiple attack developer. Instead, Audousset discloses that

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unsubstituted para-phenylenediamine and N,N-bis ( $\beta$ -hydroxyethyl) para-phenylenediamine, among numerous additional developers, are equally suitable for use in the compositions of Audousset. Therefore, Audousset provides no teaching or suggestion to select specifically the combination of a single attack developer and a multiple attack developer of Appellants' claimed hair coloring composition.

Regarding the combination of Pratt and Audousset, although Audousset describes both para-phenylenediamine and N,N-bis ( $\beta$ -hydroxyethyl) para-phenylenediamine, there is no suggestion or motivation to additionally incorporate para-phenylenediamine in the composition of Pratt to achieve Appellants' claimed composition. To do so goes directly against the principle of operation of the compositions of Pratt. As discussed above, the principle of operation of the composition of Pratt is based on the requirement of selecting only a developer which is capable of undergoing only a single nucleophilic attack reaction. In contrast, Applicants claimed invention requires a developer which is capable of undergoing more than one nucleophilic attack reaction. Additionally, Audousset provides no teaching or suggestion to select the combination of a single attack developer and a multiple attack developer of Appellants' claimed hair coloring composition. Therefore, it would not be obvious to one of ordinary skill in the hair coloring art to incorporate a developer which undergoes more than one electrophilic attack reaction in a hair coloring composition which expressly requires developers which undergo a single electrophilic attack reaction to provide the intended benefits of efficient color formation, improved accuracy in predicting the final overall color produced, and wash-fastness, for particular classes of couplers. Therefore, the combination of Pratt and Audousset fails to establish a *prima facie* case of obviousness.

Accordingly, Appellants' claims 1-17 are novel and non-obvious over the combination of Pratt and Audousset.

B. Even if a *prima facie* case of obviousness has been established, Appellants have overcome the presumption by a showing of superior and unexpected results.



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Alternatively, even if a *prima facie* case has been established, Appellants have overcome the presumption of obviousness by a showing of superior and unexpected results for Appellants' claimed hair dyeing composition versus hair dyeing compositions containing only single electrophilic attack developers and also versus compositions containing only multiple electrophilic attack developers of certain types. *See In re Wiechert*, 370 F.2d 927 (Cust. & Pat. App. 1967); *see also* MPEP 2144.09. Although arguments of counsel cannot take the place of factually supported objective evidence, rebuttal evidence can be presented in the specification. *See In re Soni*, 54 F.3d 746, 750 (Fed. Cir. 1995). "Consistent with the rule that all evidence of nonobviousness must be considered when assessing patentability, the PTO must consider comparative data in the specification in determining whether the claimed invention provides unexpected results." *See In re Soni*, 54 F.3d at 750. Therefore, Appellants exemplified single and multiple attack developers are commensurate with the scope of the developers described in Pratt.

Specifically, in Example 1 at page 11 of the specification, Appellants have demonstrated superior and unexpected results with respect to root-to-tip color evenness for Composition 3, which is representative of Appellants' hair coloring composition. Composition 3 comprises 6-dichloro-para-aminophenol ("DCP") as the single attack developer, para-phenylenediamine ("PPD") as the multiple attack developer, and 3-acetamidophenol ("3AP") as a cyan coupler. Composition 3 is contrasted with Composition 1, which comprises only DCP and 3AP. Composition 3 is also contrasted with Composition 2, which comprises only PPD and 3AP. The Evenness Results are determined according to the protocol described from page 8, line 16 to page 10, line 2 of the specification, and a smaller value indicates greater evenness (*i.e.*, less variation in color). For Composition 3, the Evenness Result is 2.65, whereas the Evenness Result is 6.70 for Composition 1 and 5.00 for Composition 2. Thus, Appellants have demonstrated that Composition 3 (*i.e.*, combination of a single attack developer and a multiple attack developer) exhibits about 2.5 times better evenness than Composition 1 (*i.e.*, only a single attack developer) and about 1.9 times better evenness than Composition 2 (*i.e.*, only a multiple attack developer).

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Further, in Example 2 at page 11 of the specification, Appellants have demonstrated superior and unexpected results with respect to root-to-tip color evenness for Composition 6, which also is representative of Appellants' hair coloring composition. Composition 6 comprises DCP, PPD, and 3-(N-acetyl)-amino-1-phenol-2-pyrazolin-5-one ("NAPP") as a magenta coupler. Composition 6 is contrasted with Composition 4, which comprises DCP and NAPP. Composition 6 is also contrasted with Composition 5, which comprises PPD and NAPP. For Composition 6, the Evenness Result is 5.36, whereas the Evenness Result is 13.47 for Composition 4 and 2.44 for Composition 5. Although Composition 6 (*i.e.*, combination of a single attack developer and a multiple attack developer) does not exhibit better evenness than Composition 5 (*i.e.*, only a multiple attack developer) in this example, Composition 6 does exhibit about 2.5 times better evenness than Composition 4 (*i.e.*, only a single attack developer).

Appellants respectfully submit that a 2.5 times improvement in color evenness over compositions comparable to the compositions of Pratt (*i.e.*, compositions comprising only a single attack developer) is sufficient to rebut a *prima facie* case of obviousness.

Also, although the Examiner asserts that Appellants' comparative examples are not commensurate with the scope of Pratt, Appellants respectfully submit that the developers of Applicants' claimed invention are relevant both in their capacities as particular developers and in their capacities as single and multiple attack developers.

Accordingly, Appellants' claims 1-17 are novel and non-obvious over the combination of Pratt and Audousset.

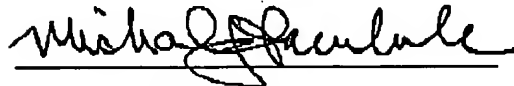
#### SUMMARY

Based on the reasons set forth above, Appellants submit that Claims 1-17 are patentably distinct from and nonobvious over the cited reference. Accordingly, the rejections under 35 USC §103(a) are improper, and Appellants respectfully request the reversal of these rejections by the Board.

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Respectfully submitted,

THE PROCTER & GAMBLE COMPANY



Signature

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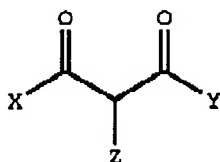
### CLAIMS APPENDIX

The following is a listing of Claims 1-17, which are the claims involved in the Appeal:

1. (Appealed) A hair colouring composition comprising
  - (i) at least one developer selected from amino aromatic systems capable of being oxidised and thereafter undergoing only a single electrophilic attack reaction, and
  - (ii) at least one developer selected from amino aromatic systems capable of being oxidised and thereafter undergoing at least two electrophilic attack reactions, and
  - (iii) at least one coupler.
2. (Appealed) A composition according to claim 1 in which the developer (i) capable of being oxidised and undergoing only a single electrophilic attack reaction comprises at least one compound selected from substituted and unsubstituted para and aminophenols.
3. (Appealed) A composition according to claim 2 in which the developer (i) is a dihalo-para-aminophenol.
4. (Appealed) A composition according to claim 3 in which the developer (i) is 2,6-dichloropara-aminophenol.
5. (Appealed) A composition according to claim 1 in which the developer (ii) comprises at least one developer selected from the group consisting of para- and ortho-disubstituted benzene compounds, disubstituted pyridine compounds, disubstituted pyrimidines, diamino substituted pyrazoles, and mixtures thereof.

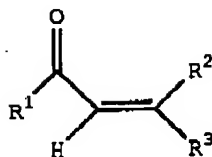
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6. (Appealed) A composition according to claim 5 in which the developer (ii) is para-phenylene diamine.
7. (Appealed) A composition according to claim 1 in which the developer (ii) is capable of being oxidised and thereafter undergoing self-coupling.
8. (Appealed) A composition according claim 1 in which the coupler (iii) includes at least one compound selected from the group of meta-disubstituted benzene compounds.
9. (Appealed) A composition according to claim 1 in which the coupler (iii) comprises at least one coupler selected from the group consisting of phenols having an active leaving group in the para position relative to the hydroxyl group; naphthols having an active leaving group in the para position relative to the hydroxyl group; and mixtures thereof.
10. (Appealed) A composition according to claim 1 in which the coupler (iii) comprises at least one compound selected from the group consisting of 1,3-diketones of the formula II:



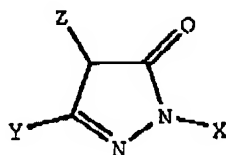
in which X and Y are non-leaving substituents and Z is an active leaving group, such that in the presence of an oxidising agent the developer reacts with the coupler substantially only at the position having the active leaving group Z, and compounds of the formula III:

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in which  $R_1$ ,  $R_2$  and  $R_3$  are, independently selected from, cycloalkyl, alkenyl, cycloalkenyl, aryl, alkaryl, aralkyl,  $-R'NHCOR$ ,  $-CONHR$ ,  $-R'CONHR$ ,  $-R'OH$ ,  $-R'SO_2R$ ,  $-R'SO_2NHR$ ,  $-R'OR$  or  $-COR$ , in any of which  $R$  is  $H$ , alkyl, cycloalkyl, alkenyl, cycloalkenyl, aryl, alkaryl or aralkyl and  $R'$  is alkylene, alkenylene, cycloalkylene, cycloalkenylene, arylene, alkarylene or aralkylenc, or substituted versions of any of these; or mixtures thereof.

11. (Appealed) A composition according to claim 1 in which the coupler comprises at least one coupler selected from compounds of the formula IV:



in which  $X$  is a non-leaving substituent, and  $Z$  is an active leaving group, and  $Y$  is an active leaving group or a non-leaving substituent, such that in the presence of an oxidising agent the developer reacts with the coupler substantially only at the position having the active leaving group  $Z$  and, if  $Y$  is an active leaving group,  $Y$ .

12. (Appealed) A method of increasing the root-to-tip evenness of colour applied to hair, said method comprising the step of applying to the hair a composition according to claim 1.
13. (Appealed) A method according to claim 12 in which said hair is selected from the group consisting of previously coloured hair, previously bleached hair, previously permed hair, and combinations thereof.

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14. (Appealed) A method of improving the root-to-tip evenness given by a hair colouring composition comprising at least one developer capable of being oxidised and thereafter undergoing only one electrophilic attack reaction and at least one coupler, said method comprising the step of combining in said hair colouring composition a developer selected from amino aromatic systems capable of being oxidised and thereafter undergoing at least two electrophilic attack reactions.
15. (Appealed) A method of colouring hair comprising applying to the hair (i) one or more developers selected from amino aromatic systems capable of being oxidised and thereafter undergoing only a single electrophilic attack reaction and (ii) one or more developers capable of being oxidised and thereafter undergoing at least two electrophilic attack reactions and (iii) one or more couplers.
16. (Appealed) A method according to claim 15 in which an oxidizing agent is mixed with said one or more developers (i) and (ii) before they are applied to the hair.
17. (Appealed) A hair colouring kit comprising
  - (a) an individually packaged colouring component comprising (i) one or more developers selected from amino aromatic systems capable of being oxidised and thereafter undergoing only a single electrophilic attack reaction and (ii) one or more developers selected from amino aromatic systems capable of being oxidised and thereafter undergoing at least two electrophilic attack reactions and (iii) one or more couplers, and
  - (b) an individually packaged oxidising component.